Attachment 3 Work Plan

Introduction

The San Francisco Public Utilities Commission (SFPUC) has identified two high priority projects for implementation to manage stormwater runoff to reduce flood damages, and to meet immediate water quality needs related to combined sewer systems by reducing the volume of combined sewer discharges and increasing the amount of flows receiving secondary treatment before being discharged to San Francisco Bay. The projects are as follows:

1. Sunnydale Flood and Stormwater Management Sewer Improvement Project
2. Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project

Each of these projects yields multiple benefits, including:

- Reduced risk of flooding and flood damages;
- Improved stormwater management;
- Increased public health and safety protection;
- Improved water quality and NPS pollution control;
- Improved system reliability; and
- Improved public access.

The projects included in this proposal are located within flood focus areas identified by the City of San Francisco based on the potential and susceptibility to frequent flooding.

Proposal Goals and Objectives

This proposal will achieve the following key goals and objectives:

Goals

- ✓ Protect public health and safety from flooding.
- ✓ Protect water quality in the San Francisco Bay.

- ✓ Provide a compliant, reliable, resilient and flexible system that can respond to catastrophic events.

Objectives

- ✓ Reduce risk of flood damages to homes, businesses, schools.
- ✓ Provide multiple benefits through project implementation by appropriately integrating recreational and streetscape enhancement features.
- ✓ Improve reliability and performance of the combined sewer system to manage wet weather flows.
- ✓ Meet immediate water quality needs related to combined sewer systems by reducing the volume of combined sewer discharges and increasing the amount of flows receiving secondary treatment before being discharged to San Francisco Bay.
- ✓ Engage public agencies, businesses and the public in stormwater pollution prevention through the implementation of projects included in basin-wide planning documents such as the Wastewater Enterprise Capital Improvement Program (WWE CIP) and Streetscape Improvement Plans.
- ✓ Enhance agency effectiveness by coordinating resources and implementing planned improvements between City agencies (i.e. between SFPUC and the Planning Department for Low Impact Design streetscape improvements in the Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project).
- ✓ Advance the regional goals and objectives established in the Bay Area IRWM Plan for San Francisco Bay Area region.

Purpose and Need

The purpose of this proposal is to implement projects that will reduce the risk of flooding and flood damages in two economically challenged neighborhoods in the City of San Francisco, and also meet the immediate water quality needs related to combined sewer and stormwater systems to reduce the volume of combined sewer discharge to State waters. It is critical that the projects in this proposal are implemented now to meet the needs as described below and to avoid potential negative impacts associated with delay of the projects.

Need to Alleviate Significant Flooding

Both projects included in this proposal are located in urbanized areas characterized by extensive impervious areas, which result in high peak flows and frequent flooding during storm events. Numerous flooding complaints have been received and flooding has been historically observed in both Cesar Chavez Street and the Sunnydale/Visitacion neighborhood, and property damage claims have been filed by residents and business owners against the City & County of San Francisco. Implementation of these projects would reduce the risk of significant flooding impacting large areas in these neighborhoods and the associated public health risks and property damage that can occur. In addition, it should be noted that there are disadvantaged communities[1] located within the project boundaries of both Sunnydale

[1] A Disadvantaged Community (DAC) is defined as a community with annual median household income that is less than 80 percent of the Statewide annual median household income (PRC §75005(g)). Location of DACs in the

and Cesar Chavez projects. One of the most critical water management needs for disadvantaged communities in the Bay Area is relief from the public safety and pollution hazards associated with the inundation of communities by storm and flood waters. Such flooding can result in a financial burden to the residents of these communities due the high clean up costs.

Need to Address Water Quality Impairment of the San Francisco Bay

Both project areas are located within Bayside watershed basins that drain to the San Francisco Bay. (The Sunnydale project is within the Sunnydale Basin and the Cesar Chavez Project is located within the Islais Creek Basin.) There are a number of water quality challenges within San Francisco Bay, and within the waters of these Bayside drainage basins. The San Francisco Bay is listed on the 303(d) list as an impaired water body due to high levels of legacy pollutants such as mercury and PCBs and a Total Maximum Daily Load (TMDL) has been developed for both mercury and PCBs in the Bay. Three near-shore Bayside beaches[2] in Candlestick Point have been added to the 303(d) list. Additionally, Islais Creek and Mission Creek, both in the Islais Creek Basin, are listed as impaired waters and Toxics Hot Spots, and a number of pollutants are listed as needing TMDLs in these water bodies primarily due to sediment contamination.

Even with these water quality challenges, there are a number of beneficial uses identified for the Sunnydale and Islais Creek Basins[3]. There are also a number of recreation areas and recreation access points in the near-shore Bayside area which provide for both contact and non-contact recreation use. **Figure 1** identifies the beneficial uses and recreation areas in the Sunnydale and Islais Creek basins. Of particular note is Candlestick Point State Recreation Area, which was the first California State Park unit developed to bring State park values into an urban setting. Candlestick Point is located in the vicinity of the Sunnydale combined sewer discharge (CSD) structure and three other CSD structures in the Sunnydale Basin. This important recreational resource has a number of water contact sports such as fishing and boardsailing. In the Islais Creek Basin, new developments and redevelopment have increased recreational uses in Islais and Mission Creeks. For example, the development of Islais Landing Beach and Mission Creek Park has created an opportunity for organized kayaking activities.

Providing secondary treatment to a larger volume of flows and reducing the volume of flows that are discharged through the CSD structures will help improve water quality in the Bay and further protect the important beneficial uses at Candlestick Point State Recreation Area, and Islais and Mission Creeks.

Background

San Francisco is unique to California as the only city predominantly served by a combined sewer system. While most cities in California have separated sewer systems, which means that stormwater runoff from the street drains directly into receiving water bodies with no treatment, San Francisco's combined system collects both sewage and stormwater in the same network of pipes, and then provides treatment before the flows are discharged.

Sunnydale project (Census Block Groups 060750605.21, 060750605.22) and in the Cesar Chavez project (Census Block Group 060750209.002).

[2] Jackrabbit, Windsurfer Circle and Sunnydale Cove beaches at Candlestick Point.

[3] http://www.swrcb.ca.gov/rwqcb2/water_issues/programs/planningtmdls/basinplan/web/bp_ch2.shtml

The City's combined sewer collection and treatment system has been developed over the past 110 years. It is a vital part of the City's infrastructure and is the result of major financial investments that have provided multiple benefits to the residents of San Francisco. There are approximately 780 miles of local sewers threading under the streets that collect wastewater and stormwater and deliver the combined flow to the larger collecting sewers (**Table 1**). The average age of these sewers is about 72 years with 173 miles of pipe being more than 100 years old.

Table 1: Collection System Inventory

Description	Total Length (miles)
Local Sewers (36" or less)	781
Major Collecting Sewers	
Sewers (greater than 36")	120
Brick Sewers	51
Transport/Storage (T/S) Structures	24
Total	976

Under typical dry weather conditions, all flow (approximately 80 million gallons) receives full secondary treatment at either the Oceanside or Southeast wastewater treatment plants. Under wet weather conditions, the system collects up to 500 million gallons a day of combined flows which receives either secondary or primary treatment at the Oceanside, Southeast, or North Point wet weather facilities or an equivalent of wet weather primary treatment within the T/S structures that surround the perimeter of the City (**Figure 2**).

Figure 1: Recreational Areas and Beneficial Uses in the Sunnydale and Islais Creek Basins

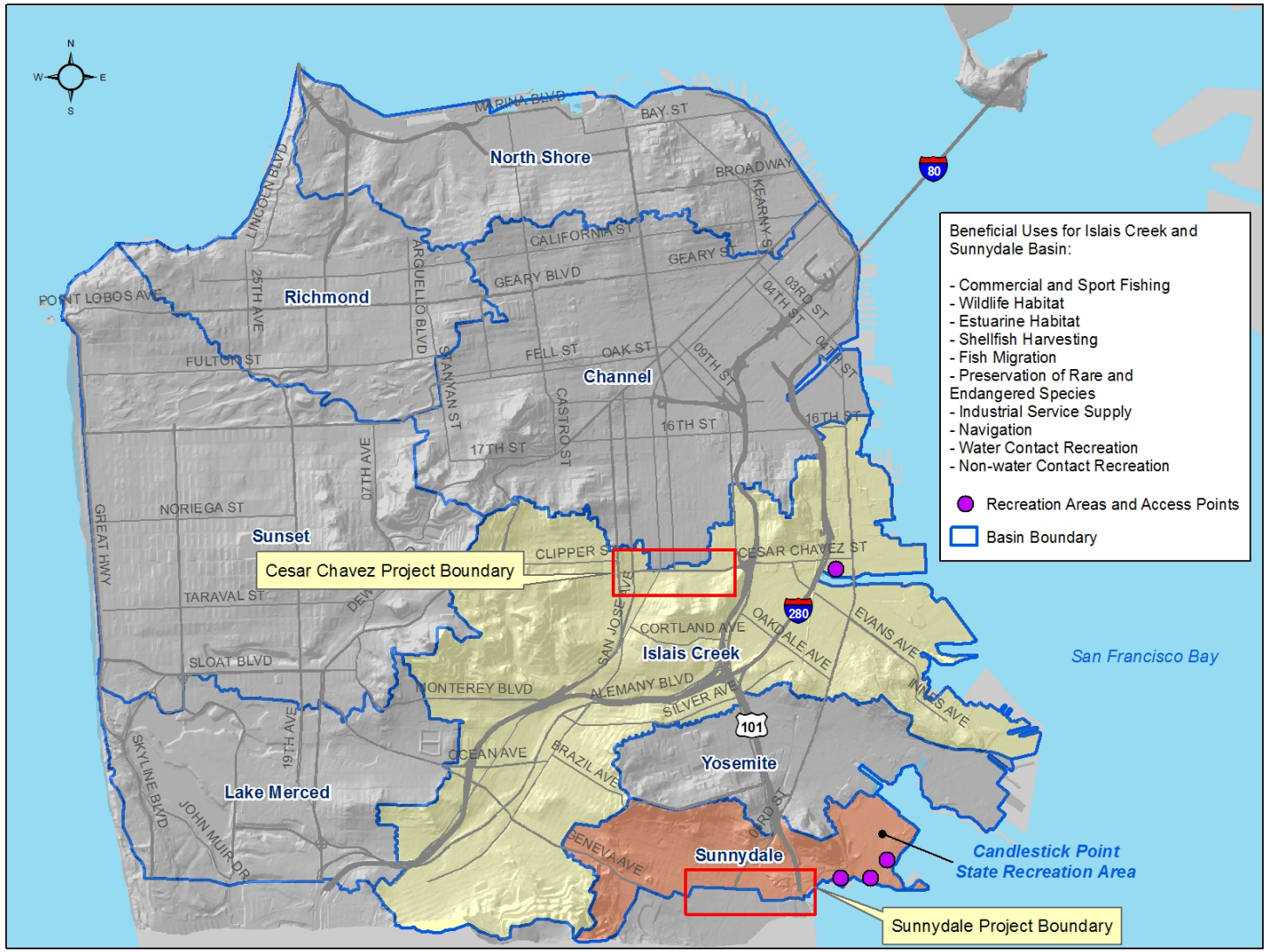
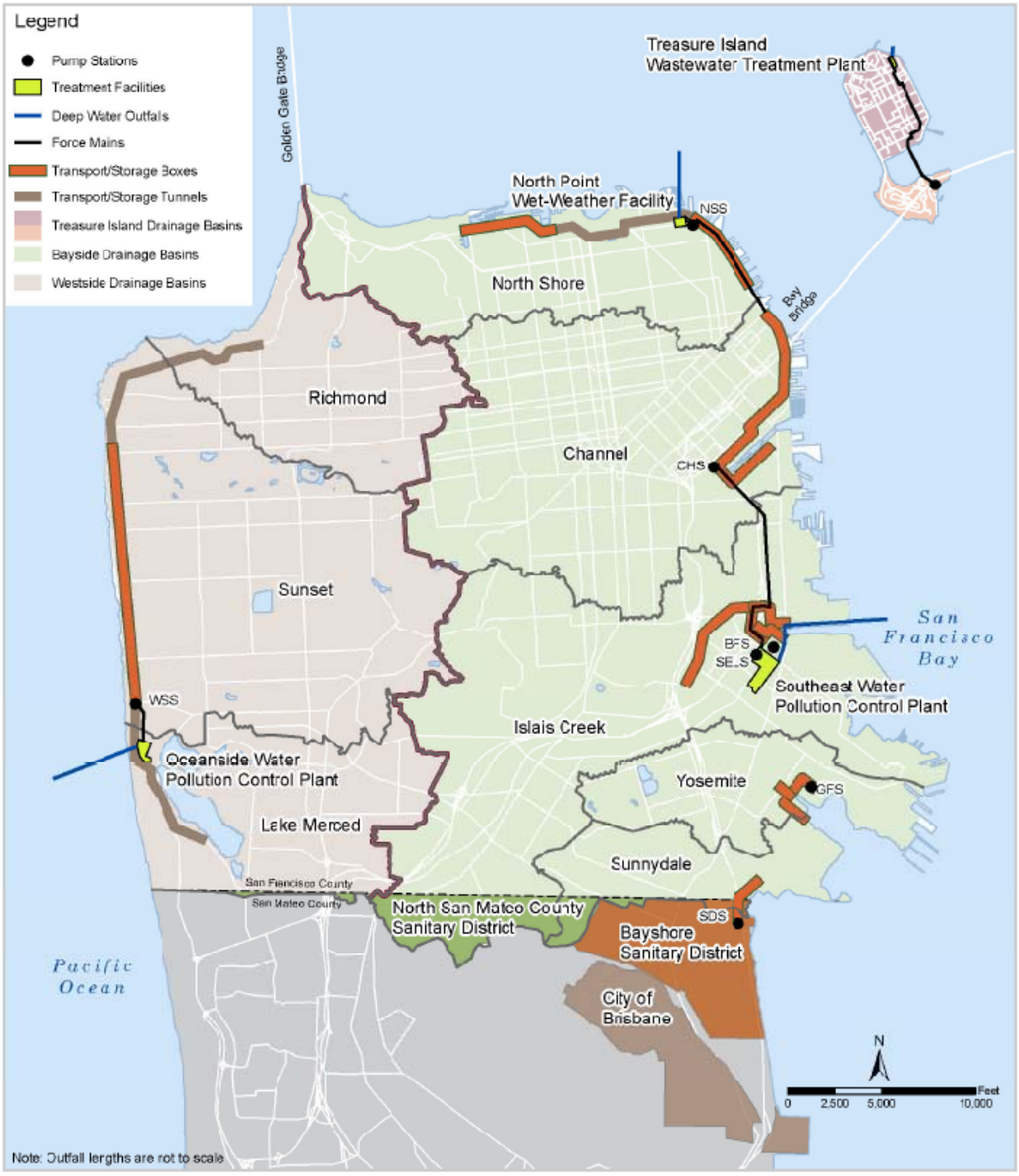


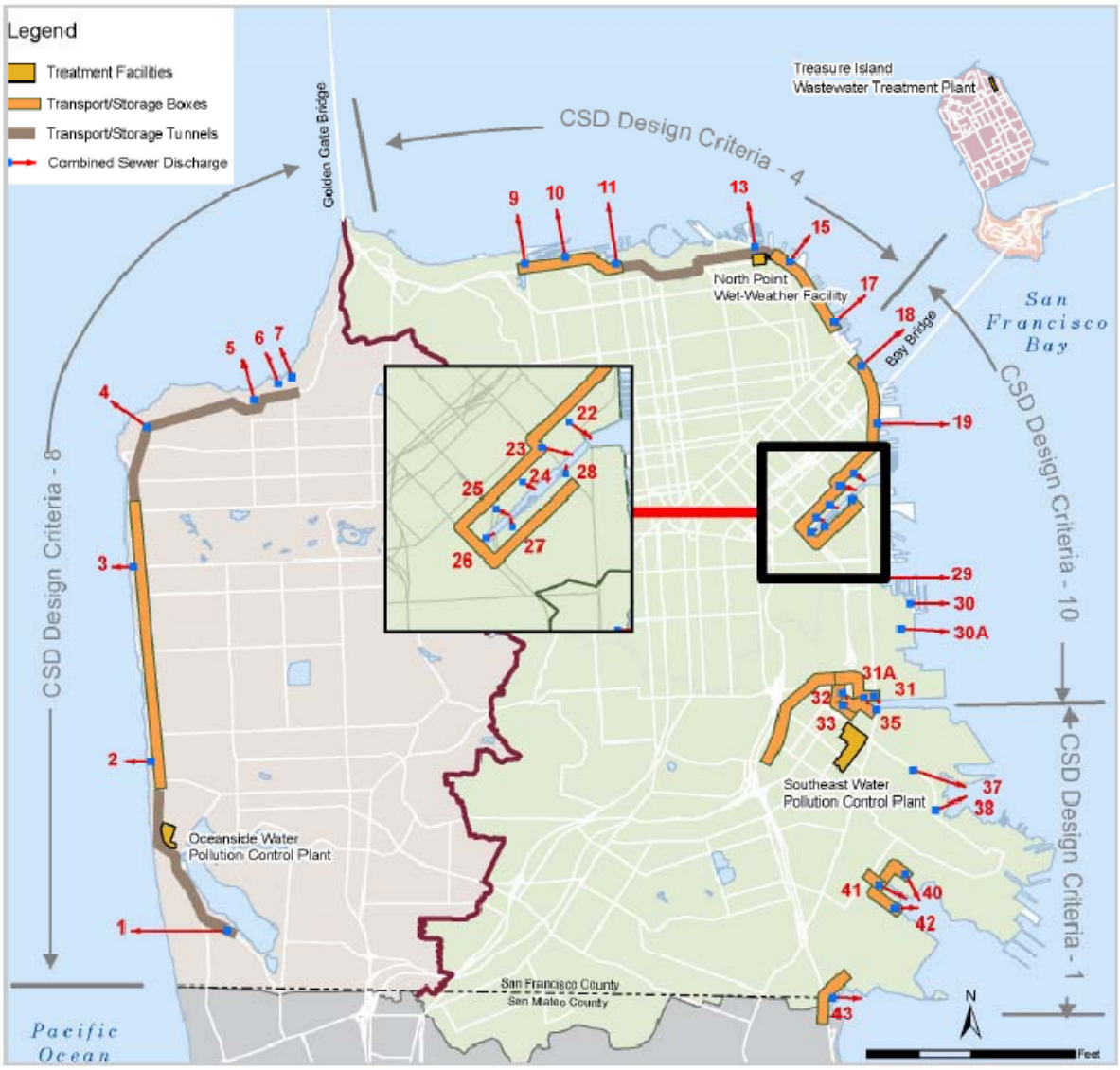
Figure 2: San Francisco's Major Drainage Basins, Stormwater and Flood Management, and Treatment Infrastructure



Note: Outfall lengths are not to scale

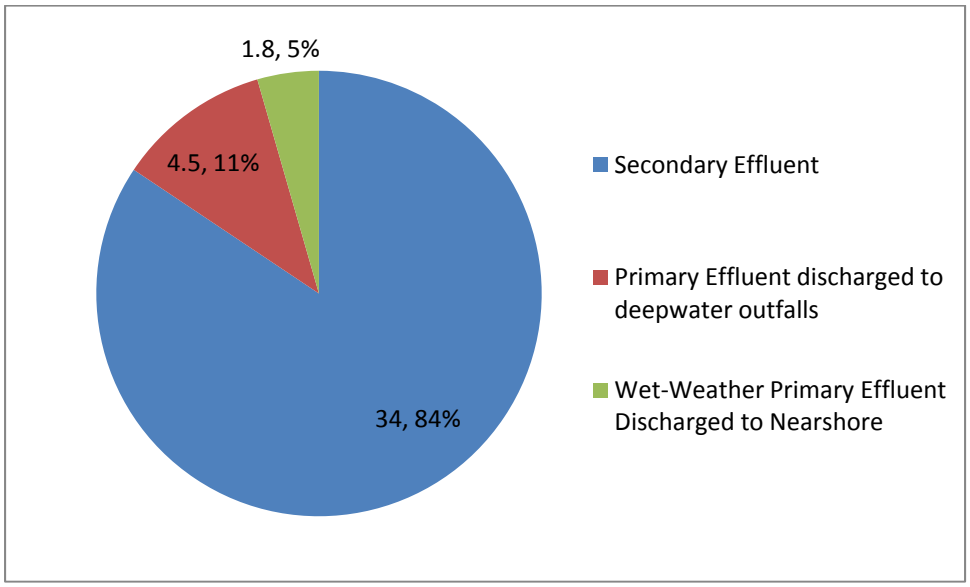
The T/S structures were built in the 1980s and 1990s to prevent pollution of the bay and ocean during large storms. First, the structures intercept and temporarily hold commingled sewage and stormwater flows that can be transported to the treatment facilities after a storm has passed to ensure that the flows receiving full secondary treatment is maximized. Second, in very large storm events, the T/S structures provide an equivalent level of primary treatment through settling and screening, and in doing so, eliminate discharge of untreated flows to the Bay and ocean during storm events. The T/S structures have 36 permitted nearshore discharge sites around the city perimeter (**Figure 3**). Discharges through these sites are called combined sewer discharges, or CSDs, because the discharged flow has received primary level-equivalent treatment in the T/S structures.

Figure 3: Location of the SFPUC Combined Sewer Discharge Sites



Of the estimated total combined sewer flow of more than 40 billion gallons per year, approximately 34 billion gallons per year receive full secondary treatment, 4.5 billion gallons per year receive primary or the equivalent of wet-weather primary (decant) treatment by settling solids and trapping floatable materials, and are discharged to deepwater outfalls, and 1.8 billion gallons per year receive decant treatment and are discharged through nearshore outfalls as CSDs (**Figure 4**).

Figure 4: Annual System Performance for Level of Treatment

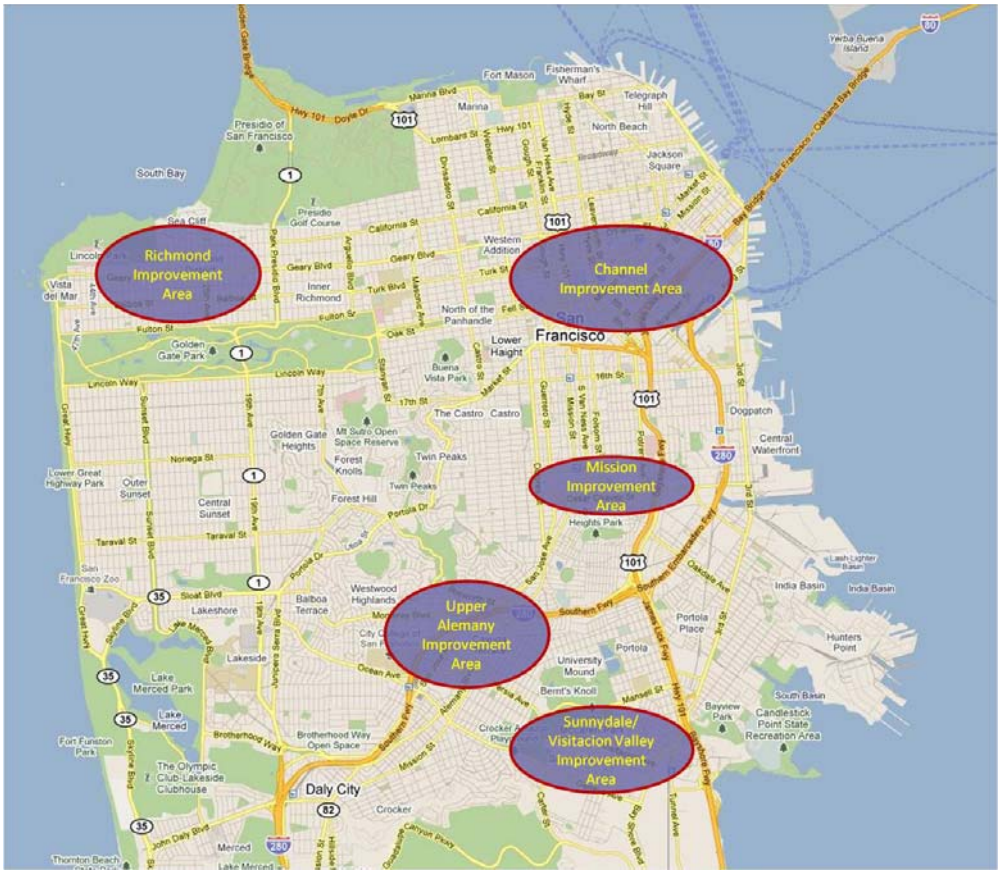


Current Stormwater and Flood Management Issues

The projects in this proposal will address both current stormwater and flood management issues and potential future system deficiencies. Changes in the patterns of city development, such as the addition of newly developed areas in old industrial zones, have resulted in reduced infiltration, with a concomitant increase in runoff. These changes have increased the volume of stormwater that enters the collection system, and in many cases have resulted in increased flooding.

SFPUC has developed a flood control and stormwater management strategy to reduce flooding in the City by identifying and targeting problem areas, prioritizing flood relief projects, optimizing existing facilities and conditions, and supplementing and modifying existing facilities where needed. In addition, low impact design (LID) techniques for stormwater management will also be implemented where practical. The strategy has identified areas in the city that are known to have significant flooding issues, and both of the proposed projects in this application are located within flood control system improvement areas. The Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project is located within the Mission improvement area, and the Sunnydale Flood and Stormwater Management Sewer Improvement Project is located within the Sunnydale/Visitacion Valley improvement area (**Figure 5**).

Figure 5: Flood Control System Improvement Project Areas



Potential Future System Deficiencies

The principal future collection system deficiencies are related to the foreseen impacts of climate change. These potential impacts include flooding, and Bay water intrusion into the collection system through the CSD structures. Sea level rise and increases in storm intensity and frequency are expected to aggravate these impacts. Low-lying subsided regions below -2 feet City Datum (9.33 feet North American Vertical Datum 1988) are most at risk for flooding, especially during the seasonal high tides (several times per year) coupled with a rain event. Sea level rise together with an increased frequency of high-intensity storms would exacerbate the types of flooding problems that currently exist in the City, which portions of the projects are susceptible to, such as:

- Higher Bay water levels that affect the upstream hydraulic grade line in sewers,
- Land subsidence, and
- Sewer blockages.

Consistency with an adopted IRWM Plan

The projects in this proposal have been evaluated by the San Francisco Bay Area Integrated Regional Water Management (IRWM) Plan Coordinating Committee (CC) as meeting the goals of the IRWM Plan, specifically:

- Contribution to the protection of public health, safety and property through the reduction of flooding and water quality impairments associated with flooding, and
- Contribution to the protection and improvement of the quality of water resources through the reduction of combined sewer discharges to the San Francisco Bay, improving opportunities for beneficial uses.

The projects in this proposal were added to the Bay Area IRWM Plan on March 28, 2011. Documentation showing that the projects are consistent with the adopted IRWM Plan is provided in Attachment 1: Authorization and Eligibility Requirements.

Consistency with Regional Water Quality Control Plan (Basin Plan)

The projects in this proposal are located in the San Francisco Bay Area IRWM Region, which is coterminous with RWQCB's Region 2. This proposal is consistent with the Basin Plan for the San Francisco Bay Basin (Region 2). One of the goals of this proposal is to protect the quality of receiving waters. All of the projects in the San Francisco Bay that benefit ambient or receiving water quality provide benefit to water quality in Region 2, and are therefore consistent with this Basin Plan. The projects in this proposal will reduce the loading and/or concentrations of mercury, PCBs and dioxins in the San Francisco Bay, by reducing the volume of combined sewer discharges and increasing the amount of flows receiving secondary treatment before being discharged to San Francisco Bay.

Project List

Table 2 below provides an overview of the projects included in this proposal and identification of the implementing agencies and current status.

Table 2: Overview of Projects and Current Status

Project	Lead and Partner Agencies	Abstract	Status
1. Sunnydale Flood and Stormwater Management Sewer Improvement Project	SFPUC	The project involves the construction of new and replacement sewer facilities in the Sunnydale/Visitacion Valley neighborhood to improve the system's ability to contain and control substantial rainfall events. A new sewer tunnel to convey wet weather flows from the Sunnydale Avenue/Talbert Street area to the Sunnydale T/S structure is planned for construction, and new sewer pipelines and replacement of existing pipelines upstream of the new tunnel to reduce flooding in upstream areas.	Final design and CEQA for the project are completed and the project has initiated construction.
2. Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project	SFPUC	The project includes construction of a new auxiliary sewer beneath Cesar Chavez Street, west of US-101 and rehabilitation of adjacent existing sewer pipelines. The new auxiliary sewer would augment the existing sewer's collection and transport of stormwater, and the existing sewer would be retained and rehabilitated. Once improvements to the sewer system are completed, a number of streetscape improvements are proposed for implementation along Valencia Street, between Mission Street and Cesar Chavez. These streetscape improvements will include low impact design (LID) stormwater management features.	Final design for the sewer component of the project is completed and is ready for construction. Conceptual design of the LID component is completed. Detailed final design will be completed upon award of the grant.

Integrated Elements of Projects

The projects included in this proposal are capable of providing the benefits claimed in the absence of other projects; therefore, implementation of the tasks described in this Attachment will yield full benefits, and the schedules of the proposed projects are not interdependent. However, the projects have also been identified as part of larger, integrated planning efforts being undertaken by SFPUC and other City agencies as described below.

Both of the projects are included in SFPUC's Wastewater Enterprise Capital Improvement Program (WWE CIP). The WWE CIP was developed to address the immediate needs of San Francisco's wastewater system, including minimizing flood risk, reducing wastewater odors, and improving treatment facilities. In that context, the projects are integrated and their implementation adds value to the overall implementation of the WWE CIP for managing the system's wastewater and stormwater.

Additionally, the Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project included in this proposal is part of a larger initiative to re-envision Cesar Chavez Street. Through the integrated planning of multiple City agencies, including SFPUC, the Department of Public Works, the Planning Department and the Municipal Transportation Agency, and with input from the community, an overall program has been developed that will transform Cesar Chavez street into an enjoyable, safe and visually attractive corridor with improved stormwater management. The sewer improvement project included in this Application represents the first step in this overall improvement. Once the sewer project is implemented, surface improvements can proceed such as implementation of LID features, traffic calming, tree plantings, and installation of bike lanes and pedestrian enhancements. In that regard, the Cesar Chavez Street Flood and Stormwater Sewer Management Improvement Project is linked to the other planned improvements that, once complete, will provide added value not just for stormwater management and water quality enhancement but also for street safety, transit improvements, and aesthetic enhancement.

Regional Map

Figure 6 shows the location of the projects in the Bay Area region and in relation to the State Plan of Flood Control. In addition to the maps included in the Introduction, which show location of the projects, regional and local drainage systems, and stormwater and flood management infrastructure, the individual project work plans in the following section provide more detailed maps and schematics for each project in the proposal.

Figure 6: Location of Projects (in relation to the SPFC)

Attachment 3 Work Plan for Sunnydale Flood and Stormwater Management Sewer Improvement Project

Project Description

The Sunnydale Flood and Stormwater Management Sewer Improvement Project (Sunnydale project or project) includes the construction of new and replacement sewer facilities in the Visitacion Valley/Sunnydale neighborhood to address conditions that have led to past flooding (**Figure 7**). The Sunnydale area of San Francisco is located in the Visitacion Valley in southeastern San Francisco, and includes the area generally south of Sunnydale Avenue and west of Bayshore Boulevard. The area has experienced recurrent flooding during heavy rain events. The Sunnydale Avenue sewer currently transports flows from an approximately 720-acre area; about 72 percent of the area is residential, 24 percent is open space (McLaren Park), and 4 percent consists of paved roadways and parking areas. Because the City's municipal wastewater system is a combined sewer system which collects both dry weather flows (residential and industrial wastewater) and wet weather flows (rain water and infiltration), the volume of flow in the system increases dramatically during wet weather conditions. The combined sewer system was built mostly in the 1910s and requires capacity improvements to convey the increased surface flow resulting from residential and commercial development that has occurred in the area since the 1920s. The existing collection system in the Sunnydale area has the capacity to convey only about 40 percent of the City's 5-year design storm flows,[1] resulting in periodic flooding.

In November 1994, San Francisco voters approved the $146-million Sewerage Improvement Bond Program. The Sunnydale project was the largest project in the program. Subsequently, in June 1998, San Francisco voters approved Proposition H, which prohibited rate increases for water and sewer services. As a result, the $146-million bond program was reduced to $50 million. A Mitigated Negative Declaration (MND) was adopted for the project in April 1999,[2] but the project was not constructed due to the reduction of the bond program funding. Proposition E was approved by voters on November 5, 2004, which allowed for rate increases and resulted in the reactivation of the project. A revised MND reflecting more current conditions and project refinements was prepared and adopted in April 2010.

The proposed project would be constructed in two phases. Phase I would include construction of a sewer tunnel from the intersection of Sunnydale Avenue and Talbert Street to convey flows eastward to the Sunnydale T/S structure, located adjacent to the San Francisco Bay near Harney Way and Alana Way. Phase II would include construction of sewer pipelines along Talbert Street between Visitacion Avenue and the former Union Pacific (UP) railroad right-of way (ROW), along Visitacion Avenue between Rutland Street and Talbert Street, and along the former UP railroad ROW between Schwerin Street and Talbert Street. In Phase I of the project, approximately 4,000 feet of new tunnel pipeline would be constructed. In Phase II, approximately 2,800 feet of pipeline would be constructed, including 1,600 feet of new pipeline and 1,200 feet of replacement pipeline. The new pipelines would operate primarily in wet

[1] A 5-year storm event is one that has the probability of occurring once every 5 years. In any given year, there is a 20 percent chance that a 5-year storm will occur.

[2] San Francisco Planning Department. 1999. *Sunnydale Sewer Improvement Project Negative Declaration.* February 27. This document is on file and available for public review at the Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2009.0311E.

weather conditions and supplement existing pipelines that would continue to be used for dry weather conveyance.

The existing 6.5-foot-diameter sewer tunnel that currently carries flow from the Sunnydale area to the Sunnydale T/S structure would continue to convey dry weather flows. During wet weather, excess combined flows in the existing 6.5-foot-diameter sewer tunnel would overflow into the proposed new system and would be transported into the Sunnydale T/S structure and pump station. Use of the new tunnel would be limited to wet weather flow conditions. Dry weather flows from Bayshore Sanitary District (BSD) and the Brisbane/Guadalupe Valley Municipal Improvement District (MID) in northern San Mateo County would continue to discharge into the existing sewer tunnel in accordance with agreements between these two districts and the SFPUC.

Once constructed, the Sunnydale project will provide capacity to minimize flooding risk in the Visitacion Valley/Sunnydale neighborhoods of San Francisco.

Project Purpose and Need

The Sunnydale project would involve the construction of new and replacement sewer facilities to alleviate the risk of local flooding in the Visitacion Valley/Sunnydale neighborhood in San Francisco. The current collection system converges into a single 6.5-foot diameter sewer constructed in 1913. The project is intended to address stormwater containment and control capabilities in the low-lying areas from Visitacion Avenue southward to the San Mateo County line, and from Schwerin Street eastward to Bayshore Boulevard. The project has been designed to contain flows from a 5-year design storm. The primary objective of the project is to address localized flooding in the Sunnydale/Visitacion neighborhood in San Francisco. Other project objectives include providing a dry weather (sanitary) flow bypass for future repair and rehabilitation work on the existing 6.5-foot diameter sewer and improving the reliability of the combined sewer system. If this project is not implemented, the risk of public health and property damage from potential flooding in economically challenged Visitacion Valley community will not be alleviated.

Figure 7: Location of Sunnydale Flood and Stormwater Management Sewer Improvement Project

Project Work Completed/Expected to be Completed before September 1, 2011

Category	Summary of Completed Work and Key Findings	Existing Data and Studies
Project Administration	Project administration to date includes project management for the planning and design tasks, and pre-construction support.	Not applicable.
Land Purchase/Easement	SFPUC has acquired permanent subsurface sewer easements required for this project from Recology Properties, Inc. and Recology San Francisco totaling $174,001, comprising approximately 32,000 square feet.	City and County of San Francisco Resolution File No. 329-10, passed July 2010.
	SFPUC has entered into agreements with the owners of property being developed in the vicinity of the project to enter and use the property for the purpose of providing working and soils/materials storage space to facility the construction of the project, including but not limited to installing security fencing, removing vegetation, and storing and using a construction trailer, together with necessary rights of ingress and egress over the property.	City and County of San Francisco Resolution File No. 330-10, passed July 2010. Agreement to Enter and Use Property between City and County of San Francisco and a) Visitacion Development LLC b) Universal Paragon Corporation
Assessment and Evaluation	The following technical studies have been completed for this project: • A planning report for Phase I of the project was completed in March 1998 by the City and County of San Francisco. The report noted that the existing Sunnydale sewer system suffers from extensive hydraulic inadequacies which result in localized flooding and damage to property and public safety issues. An alternatives analysis was developed as part of the report to relieving flooding in the Sunnydale area.	City and County of San Francisco, 1998. Sunnydale Sewer Improvements Project Planning Report. Bureau of Engineering. Hydraulics Section.
	• A draft conceptual engineering report (CER) is currently being prepared for Phase II of the project. The report describes the proposed sewer alignment in Phase II of the project, constraints and considerations, comparison of the alignments, and a recommended alignment.	City and County of San Francisco, March 2011. Sunnydale Sewer Improvements, Phase II. Bureau of Engineering. Hydraulics Section.
	• This report evaluated the use of trenchless methods for construction of	Jacobs Associates, 2010. Sunnydale

Category	Summary of Completed Work and Key Findings	Existing Data and Studies
	alternative segments in Phase II of the project.	Sewer Improvements, Phase II. Trenchless Construction Method Evaluation – a) Segments 4A and 4C b) Segment 4B
Final Design	• Project design for Phase I began in July 2007, and final design for Phase I of the project was completed in October 2009. • Project design for Phase II began in February 2011 and final design is planned for completion in January 2012.	100% Design Drawings and Specifications for Phase I
Environmental Documentation	A Mitigated Negative Declaration (MND) was adopted for the Sunnydale project in April 1999, but the project was not constructed due to the reduction of the bond funding program as described above. A revised MND reflecting more current conditions and project refinements was prepared and adopted in April 2010. The key finding from the MND indicated that the project does not have a significant effect on the environment.	San Francisco Planning Department, 1999 and 2010. a) Sunnydale Sewer Improvement Project Negative Declaration. February 27, 2009. Case No. 98.132E. b) Sunnydale Sewer System Improvement Project MND. April 5, 2010. Case No. 2009.0311E.
Permitting	The following permits have been obtained by SFPUC for the project: • Bay Conservation and Development Commission (BCDC) – Development Permit No. M09-2 and amendment to existing permit (for construction of the proposed tunnel to the existing Sunnydale T/S structure, which would be within 100 feet of the Bay shoreline). • Caltrans – Encroachment Permit No. 0408-NTN1683 (for construction of tunnel under US-101). • California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) – Approval of Waste Management Plan dated February 17, 2011 addressing construction activities and on-site	Not applicable.

Category	Summary of Completed Work and Key Findings	Existing Data and Studies
	contamination. • California Office of Safety and Health Administration – Permits related to trenchless installation work for classification of site. • Peninsula Corridor Joint Powers Board – Construction and Maintenance License Agreement#800468 and Right-of-Entry Permit (for construction under Caltrain tracks). • All required local city and county permits.	
Construction Contracting	Construction contracting for Phase I of the project, consisting of preparation of bid package, advertisement for bids, bid evaluation, award of contract and the certification process was completed in September 2010.	Not applicable.
Construction	Construction of Phase I of the project began in September 2010 and will be completed in March 2012.	Not applicable.
Environmental Compliance/Mitigation /Enhancement	All mitigation measures listed in the Mitigation Monitoring and Reporting Program have been implemented during construction of Phase I of the project.	a) Archaeological Testing and Monitoring Plan (ATMP) b) Final Archaeological Resources Report
Construction Administration	Construction administration and management activities are currently being carried out with the construction of Phase I of the project.	Not applicable.

Project Timing and Phasing

This project is a multi-phased project complex, consisting of the following phases:

Description of Phase	Timing	Requesting Grant Funding	Linkages to other projects that must be completed first or that are essential to obtain the full benefits of the project
Phase I – construction of a new sewer tunnel from the Sunnydale T/S structure adjacent to the San Francisco Bay to the intersection of Sunnydale Avenue and Talbert Street.	September 2010 through March 2012	Yes, partial	There are no linkages to other projects that must be completed first because this project is a standalone project. Phase I of this project will begin before construction of Phase II.
Phase II – construction of new sewer pipelines upstream of the tunnel in Phase I to connect to existing sewers that drain the Visitacion Valley/Sunnydale neighborhood, and to replace aging sewer pipelines along an SFPUC sewer easement.	June 2012 to January 2014	Yes	This phase of the project will occur after Phase I.

Work Plan (For work to be conducted after September 1, 2011)

Task 1: Administration

The SFPUC will act as lead agency for implementation of the Sunnydale Flood and Stormwater Management Sewer Improvement Project. Project administration activities will include the following:

a. Support for Final Design (i.e. coordination with design consultant, and Bureau of Engineering Hydraulics Section)
b. Public Outreach
c. Preparation of invoices to DWR

Deliverable(s):

- Reports, contracts, meeting notes, etc.
- Project invoices and backup documentation as prepared by contractors and submitted by SFPUC.

Task 2: Labor Compliance Program

Not applicable. It has been verified with DWR that a Labor Compliance Program is not required for Proposition 1E (based on communication with Keith Wallace, Assistant Project Manager of the Division of IRWM, Financial Assistance Branch, dated April 5, 2011).

Task 3: Reporting

SFPUC will be responsible for compiling quarterly progress reports and invoices for submittal to DWR. Reports will meet generally accepted professional standards for technical reporting and be proofread for content, numerical accuracy, spelling and grammar prior submittal to the State.

The Quarterly Reports will explain the status of the project and will include the following information:

- Summary of the work completed for the project during the reporting period
- Statement of progress compared to the schedule listed in Attachment 5 of this proposal
- Comparison of actual costs to date to the budget listed in Attachment 4 of this proposal

SFPUC will prepare a Final Project Report documenting implementation of the Program, to be submitted to DWR within ninety (90) calendar days of DWR verification that all tasks associated with a project have been completed. The Final Project Report will include the following information:

- Description of the actual work done
- Certification of As-Built Drawings
- Final schedule showing actual progress versus planned progress
- Lessons learned

Deliverable(s):

- Quarterly Reports and Invoices
- Final Report

Land Purchase Easement

Easement purchase has been completed. Permanent subsurface sewer easements were obtained for this project.

Task 4: Assessment and Evaluation

Not applicable. Assessments and evaluation for this project have been completed.

Task 5: Final Design

This task involves completion of final design plans and specifications for Phase II of the project.

Deliverable(s):

- Final Design Plans and Specifications for Phase II

Task 6: Environmental Documentation

Not applicable. All necessary environmental documentation has been completed for this project.

Task 7: Permitting

Not applicable. All relevant permits have been secured for this project.

Task 8: Construction Contracting

SFPUC will prepare construction documents, bid process and contract construction for Phase II of the project. This task involves preparation of a contract and bid solicitation package consisting of final

design plans and specs for Phase II, advertising for bids, bid opening, responding to contractor requests for information (RFIs) and preparing amendments as needed, review of the bids submitted and awarding the contract to the successful bidder.

Deliverable(s):

- Advertisement for Bid
- Bid Summary
- Award of Contract

Task 9: Construction

This task involves construction of 2,800 feet of sewer pipeline, including 1,600 feet of new pipeline and 1,200 feet of replacement pipeline. The new pipelines would operate primarily in wet weather conditions and supplement existing pipelines that would continue to be used for dry weather conveyance. Specific construction activities include:

Subtask 9.1: Mobilization and Site Preparation

- All equipment will be mobilized to the site as needed.
- Prior to the start of construction, the construction boundary and the locations of all underground utilities would be identified through field survey (potholing) and the use of Underground Service Alert.
- Site preparation includes setting up of temporary staging areas for construction contractor set-up, and equipment and material storage, and installation of temporary barricades and/or chain-link fences at the staging area to prevent unauthorized access to the staging area.

Subtask 9.2: Project Construction

- All sewer pipelines in Phase II would be installed through cut-and-cover or trenchless construction or a combination of both methods. These options and construction methods have been studied in detail in "Sunnydale Trenchless Construction Method Evaluation" by Jacobs Associates (May 2010).

Subtask 9.3: Performance Testing and Demobilization

- Equipment will be demobilized appropriately and most cost effectively with equipment remaining on site only as long as needed.
- Performance testing will occur as needed during project construction and will also be accessed after project completion.

Deliverable(s):

- As-builts
- Performance testing reports

Task 10: Environmental Compliance/Mitigation/Enhancement

SFPUC will implement the environmental mitigation measures required in the Mitigation Monitoring and Reporting Program (MMRP). The required mitigation measures include mitigation measures for Aesthetics, Cultural Resources, Noise Control, Air Quality, Biological Resources, Geology, Soils and Seismicity, Hydrology, and Hazardous Materials.

Task 11: Construction Administration

This task invoices administration activities associated with the construction of the project, including:

- Coordination with the contractor
- Change Order requests
- Payment of contractor invoices
- Public notification of construction activities
- Engineering support during construction
- Construction inspections
- Oversee project closeout

Deliverable(s):

- Approved contractor invoices
- Onsite inspection reports

Additional Project Information

Merits of the building materials and/or computational methods that were used for the project development	Hydraulic modeling of the project was conducted using SFPUC's citywide InfoWorks wastewater collection system simulation model. The model was initially developed in 2005 as part of San Francisco's Sewer System Master Plan and has continuously been updated and refined since that time through an ongoing process of database development, quality control reviews, calibration, and validation. The model is utilized by the SFPUC and the City's hydraulic engineers to analyze the expected performance of proposed improvement projects in San Francisco.
Construction standards that will be used for project implementation	This will follow all applicable State and Federal construction and safety standards.
Data Management and Monitoring Deliverables consistent with the IRWM Plan Standards and Guidance – Data Management Standard	Project performance will be assessed by SFPUC through the following monitoring deliverables: • Real-time monitoring of flood complaints through the City's 311 Customer Service Center. • Field verification of project performance by SFPUC field crew. Data gathered from field verification will be managed via the City's Stormwatch mapping showing spatial distribution of complaints vs. crew observations. • Water quality monitoring of wet weather discharges at the Sunnydale discharge location and tracking of beach postings at the Candlestick Point State Recreation Area, in accordance with standards for reporting to the Regional Water Quality Control Board (RWQCB).

Attachment 3 Work Plan for Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project

Project Description

The Upper Mission/Cesar Chavez neighborhood is located in the Islais Creek drainage basin, the largest drainage basin in the City of San Francisco. Cesar Chavez Street is a major thoroughfare in these neighborhoods, providing a connection to US Highway 101, as well as a corridor for public transit, bicycles and pedestrians. The street follows the alignment of what was formerly Precita Creek (a tributary to Islais Creek) until the creek was filled and the street was built in the 1880s. During this time, the original brick sewer was installed and other sewers in the project area were constructed. Since the 1880s, the amount of stormwater runoff has increased dramatically due to the increase in impervious surfaces as a result of development, and additions of catch basins and drains, which funnel surface runoff directly into the combined sewer collection system. This development has resulted in the potential for significant flooding during heavy storms along the section of Cesar Chavez Street between Mission Street and US Highway 101. The Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project (Cesar Chavez Project or project) includes improvements to existing sewer pipelines in the Mission District and lower Bernal Heights area (project area) to improve reliability of the combined sewer system and to minimize potential flooding in the project area. The project includes installation of a new 72- to 84-inch diameter auxiliary sewer beneath Cesar Chavez Street between Hampshire Street and San Jose Avenue, west of US-101 and replacement or relining of adjacent existing sewer pipelines. The new auxiliary sewer would augment the existing sewer's collection and transport of combined sewage and stormwater, and the existing original sewer running underneath Cesar Chavez Street would be rehabilitated. The project would improve operations of the system's flood control functions in the project area during heavy storms, a critical element of an overall flood protection and stormwater management effort in this watershed.

The Cesar Chavez Project also includes implementation of low impact design (LID) stormwater management features along Valencia Street between Cesar Chavez Street and Mission Street. The LID features will increase the ecological function of the landscape and provide both a stormwater quantity and quality benefit by decreasing the rate and volume of stormwater entering the combined sewer. The proposed LID features include approximately 2,100 square feet of stormwater planting areas, 800 square feet of tree wells, 10,000 square feet of permeable pavers in the parking lanes, and 3 new plazas with permeable pavers. In addition to the stormwater benefits, the implementation of these features will also enhance street greening, bicycle safety and aesthetics. **Figure 8** shows the location of the project including the proposed sewer alignment along Cesar Chavez Street and the proposed Valencia Street LID improvements. **Figures 9 and 10** show the proposed design of the Valencia Street LID improvements.

Implementation of the Cesar Chavez Project will allow additional planned projects in the Cesar Chavez corridor to move forward. These separately funded projects include streetscape improvements along Cesar Chavez Street that will enhance bicycle and pedestrian safety, as well as greening enhancement

that will provide aesthetic improvements and implementation of stormwater management features. The planned Cesar Chavez streetscape and greening improvements are all part of an integrated vision for the Cesar Chavez corridor being implemented by multiple City agencies but cannot move forward until the sewer work proposed as part of this Application is completed.

Project Purpose and Need

The purpose of the project is to provide an auxiliary sewer and improvements to the existing sewer to increase the reliability of the combined sewer system and to improve operations of the system's flood control functions in the project area. Overall project objectives include: (1) Improving the sewer system's ability to contain flows from a 5-year storm; (2) Improving hydraulic capacity to minimize potential flooding; and (3) Maximizing hydraulic grade line (HGL) control.

If this project is not implemented, the risk of significant flooding that could impact a large area in the Cesar Chavez Street neighborhood would continue. Flooding from combined sewers can cause water quality impairments and public health impacts through exposure to polluted floodwaters. Because much of the drainage area in the vicinity of Cesar Chavez Street is steep, the time for concentration of water is short and peak flows tend to arrive coincidently along the Cesar Chavez Street sewer to the east of San Jose Avenue. Numerous flooding complaints have been received and flooding was historically observed along Cesar Chavez Street, causing disruption to traffic and pedestrian access on the street and sidewalks. Flooding of properties at the Mission-Cesar Chavez Street occurred during the winter of 2003/2004, where residents and business owners had filed damage claims against the City & County of San Francisco.

In addition, this project is coordinated with the San Francisco Department of Public Works' (DPW) Cesar Chavez Low Impact Development Greening Project, in which the construction phase of the projects will dovetail into one another in order to realize cost-savings to the City and to minimize disruption to the community.

Figure 8: Location of Cesar Chavez Flood and Stormwater Management Sewer Improvement Project

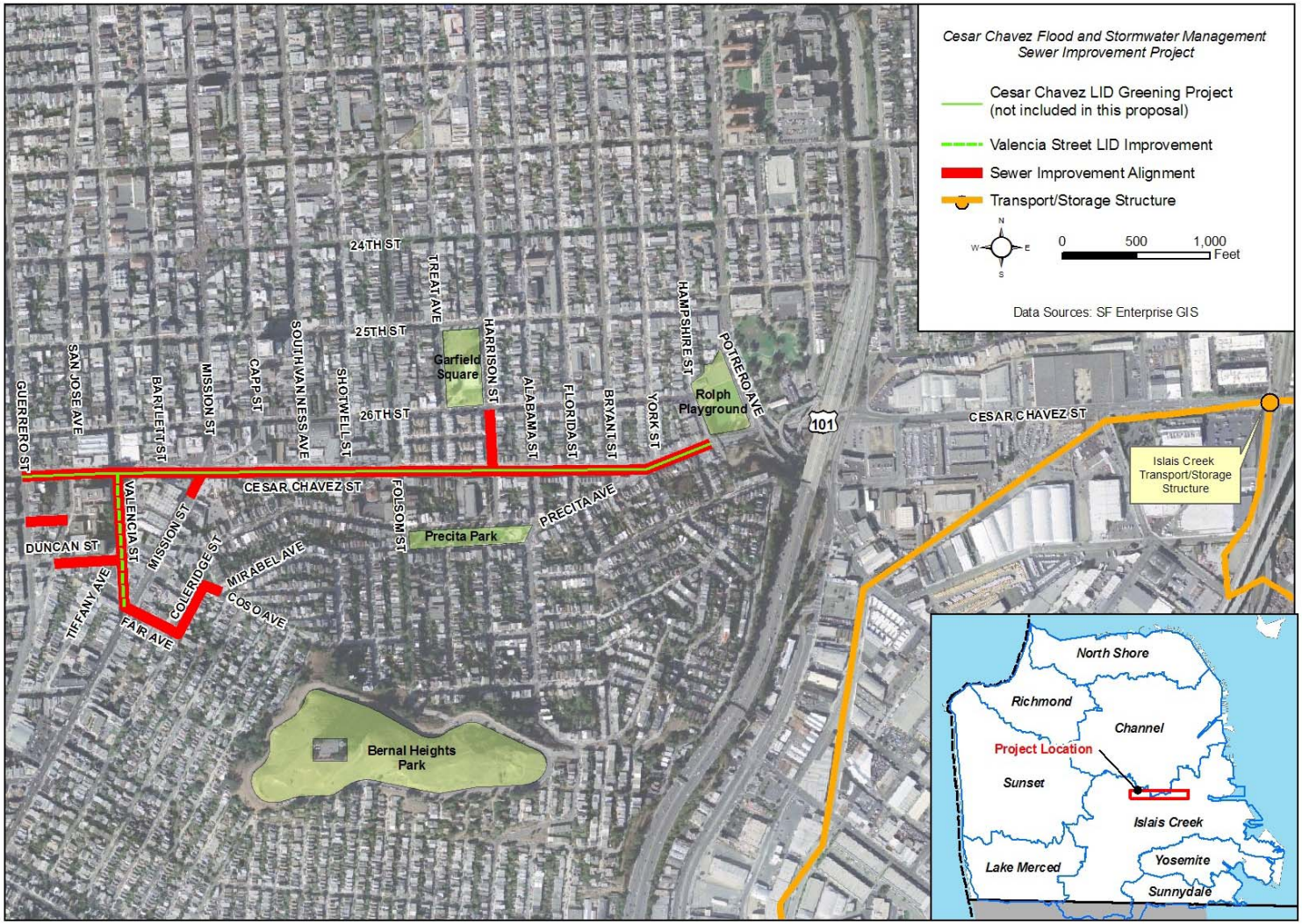


Figure 9: Location of Valencia Street LID Improvements

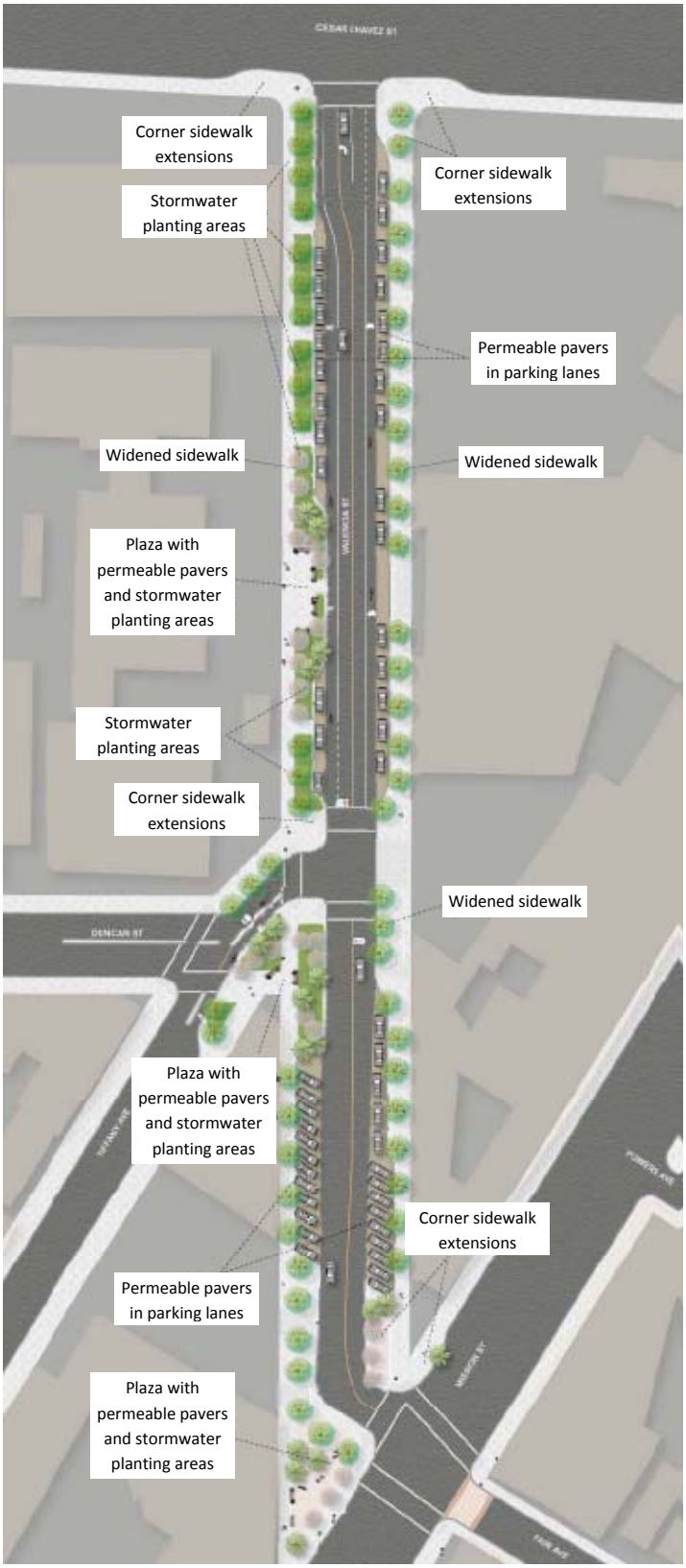
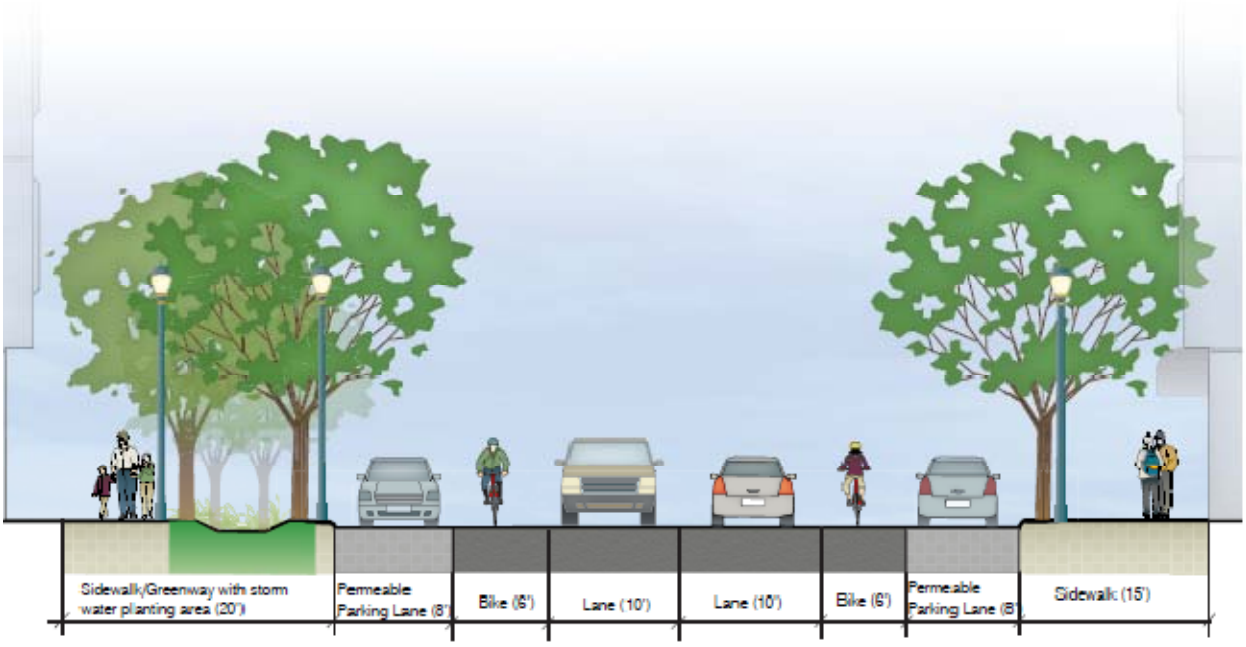
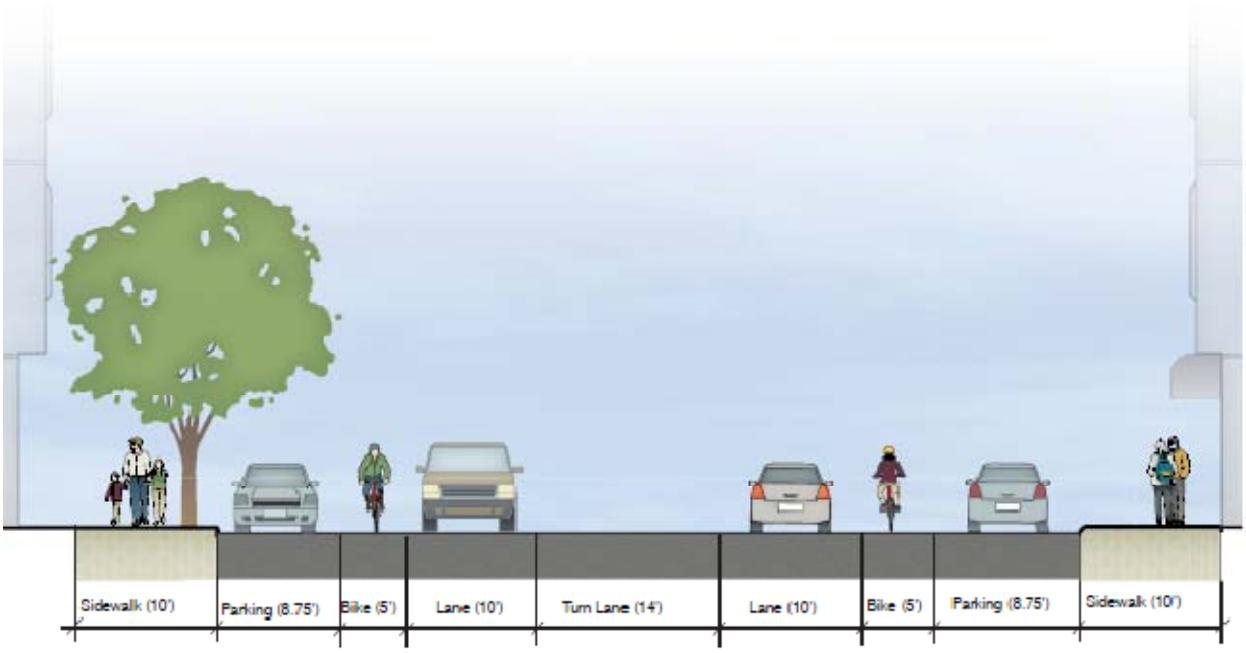


Figure 10: Cross-section View of Valencia Street LID Improvements



82.5' Overall Street Width

Valencia Street: Proposed Greenway



82.5' Overall Street Width

Valencia Street: Existing Conditions

Project Work Completed/Expected to be Completed before September 1, 2011

Category	Summary of Completed Work and Key Findings	Existing Data and Studies
Project Administration	Project administration to date includes project management for the planning and design tasks, and pre-construction support.	Not applicable.
Land Purchase/Easement	The project is located entirely within the City right-of-way and no land purchases/easements are required.	Not applicable.
Assessment and Evaluation	The following technical studies have been completed for this project: • A conceptual engineering report for the sewer improvement was completed in August 2008 by San Francisco Department of Public Works. The report noted that there have been a number of flooding complaints in the area of Mission Street and Cesar Chavez in the past number of years during storm events. An alternatives analysis was developed and a recommended alignment for the project was identified. • A geotechnical report for the proposed alignment was completed in December, 2008. The report developed geotechnical design criteria for the project. • The Mission District Streetscape Plan (MDSP) was developed by the City of San Francisco in October 2010, which recommended streetscape improvements along Valencia Street between Cesar Chavez and Mission Streets, including LID components.	Hydraulic Section San Francisco Department of Public Works (SFDPW), 2008. Cesar Chavez Street Sewer Improvement Project, Phase I, Conceptual Engineering Report. SFDPW, 2008. Cesar Chavez Sewer Improvement Project. Geotechnical Report. December, 2008. San Francisco Planning Department, 2010. The Mission District Streetscape Plan. October 2010.
Final Design	Project design for the sewer system improvement is completed. Conceptual design of the Valencia Street LID component is completed (see Figure 9). Detailed final design can begin upon award of the grant.	100% Design Drawings and Specifications (sewer system improvement)

Category	Summary of Completed Work and Key Findings	Existing Data and Studies
Environmental Documentation	A Mitigated Negative Declaration (MND) was adopted for the Sewer System Improvement in January 2010. The key finding from the MND indicated that the project does not have a significant effect on the environment. CEQA clearance for the Valencia-Mission Street LID Improvement was secured through a MND, approved in April 2010.	San Francisco Planning Department, 2010. Cesar Chavez Street Sewer System Improvement Project MND. January 2010. Case No. 2009.0276E. San Francisco Planning Department, 2010. Mission District Streetscape Project MND. April 2010. Case No. 2008.1075E.
Permitting	The following permits have been or will be obtained by SFPUC/Contractor for the sewer system improvement: • Bay Area Rapid Transit District (BART) – Encroachment Permit for Construction. • SFPUC/WWE/Collection System Division (Pretreatment Program) – Permit for wastewater/groundwater discharge to a publicly owned treatment works (POTW) • SF DPW Bureau of Street Use and Mapping – Excavation Permit. • CAL-OSHA – Permits related to trenchless installation work for classification of site. • California Department of Transportation (Caltrans) – Encroachment Permit • All required local city and county permits.	Not applicable.
Construction Contracting	Construction contracting for the project, consisting of preparation of bid package, advertisement for bids, and bid evaluation has been completed. The contract was awarded by the SFPUC on 3/8/2011, and the certification process is expected to be completed by April or May of 2011.	Not applicable.
Construction	Construction of the project may begin in April/May 2011.	Not applicable.

Category	Summary of Completed Work and Key Findings	Existing Data and Studies
Environmental Compliance/Mitigation/Enhancement	All mitigation measures listed in the Mitigation Monitoring and Reporting Program will be implemented throughout project construction.	See San Francisco Planning Department, 2010. Cesar Chavez Street Sewer System Improvement Project MND. January 2010. Case No. 2009.0276E.
Construction Administration	Construction administration and management activities are currently being carried out with the construction of the project.	Not applicable.

Project Timing and Phasing

This project is a multi-phased project complex, consisting of the following phases:

Description of Phase	Timing	Requesting Grant Funding	Linkages to other projects that must be completed first or that are essential to obtain the full benefits of the project
Sewer Improvements – this phase is intended to provide area-wide improvements to the existing sewer system in the Mission District and lower Bernal Heights in San Francisco. The construction project will increase reliability of the combined sewer system and minimize potential flooding in the area.	April/May 2011 through April 2013	Yes	There are no linkages to other projects that must be completed first.
Low Impact Design (LID) Improvements on Valencia Street	Upon completion of sewer improvements on Valencia Street	Yes	The sewer improvements must be completed first and are essential to obtain the full benefits of the project.

Work Plan (For work to be conducted after September 1, 2011)

Task 1: Administration

The SFPUC will act as lead agency for implementation of the Cesar Chavez Street Flood and Stormwater Management Sewer Improvement Project. Project administration activities will include the following:

a. Support for Final Design (i.e. coordination with design consultant, and Bureau of Engineering Hydraulics Section)
b. Public Outreach
c. Preparation of invoices to DWR

Deliverable(s):

- Reports, contracts, meetings notes, etc.
- Project invoices and backup documentation as prepared by contractors and submitted by SFPUC.

Task 2: Labor Compliance Program

Not applicable. It has been verified with DWR that a Labor Compliance Program is not required for Proposition 1E (based on communication with Keith Wallace, Assistant Project Manager of the Division of IRWM, Financial Assistance Branch, dated April 5, 2011).

Task 3: Reporting

SFPUC will be responsible for compiling quarterly progress reports and invoices for submittal to DWR. Reports will meet generally accepted professional standards for technical reporting and be proofread for content, numerical accuracy, spelling and grammar prior submittal to the State.

The Quarterly Reports will explain the status of the project and will include the following information:

- Summary of the work completed for the project during the reporting period
- Statement of progress compared to the schedule listed in Attachment 5 of this proposal
- Comparison of actual costs to date to the budget listed in Attachment 4 of this proposal

SFPUC will prepare a Final Project Report documenting implementation of the Program, to be submitted to DWR within ninety (90) calendar days of DWR verification that all tasks associated with a project have been completed. The Final Project Report will include the following information:

- Description of the actual work done
- Certification of As-Built Drawings
- Final schedule showing actual progress versus planned progress
- Lessons learned

Deliverable(s):

- Quarterly Reports and Invoices
- Final Report

Land Purchase Easement

Not applicable. The project is located within the City right-of-ways.

Task 4: Assessment and Evaluation

Not applicable. Assessments and evaluation for this project have been completed.

Task 5: Final Design

Final design for the sewer system improvements has been completed. Contingent on the award of the full requested grant amount, final design plans and plant palettes for the Valencia Street LID Improvements would be developed.

Deliverable(s):

- Final Design Plans and Specifications for each phase of work
- Plant Palettes

Task 6: Environmental Documentation

Not applicable. All necessary environmental documentation has been completed for this project.

Task 7: Permitting

Not applicable. All relevant permits have been secured for this project.

Task 8: Construction Contracting

Not applicable. Construction contracting for the sewer portion of work has been completed and the construction contract was awarded on March 8, 2011.

Task 9: Construction

The proposed sewer alignment along Cesar Chavez Street would total approximately 6,000 linear feet in addition to (1) construction of new junction structures; (2) modification of existing junction structures and manholes along the sewer alignment; and (3) construction of new cross-connections between the new and existing sewers. Specific construction activities include:

Subtask 9.1: Mobilization and Site Preparation

- All equipment will be mobilized to the site as needed.
- Prior to the start of construction, the construction boundary and the locations of underground utilities would be identified through field survey (potholing) and the use of Underground Service Alert.
- Site preparation includes: installation of temporary streetlights in the sidewalk and removal of streetlights in the center median to provide work are for the pipeline installation; setting up of temporary staging areas for equipment and material storage; and installation of temporary barriers to prevent unauthorized access to the staging area.

Subtask 9.2: Project Construction

- Installation of a new 72-inch to 84-inch diameter auxiliary sewer beneath Cesar Chavez Street between Hampshire Street and San Jose Avenue, west of US-101.
- Rehabilitation of the existing sewer under Cesar Chavez Street. The existing brick sewer would be rehabilitated by relining. Both the new and existing sewer would continue to carry dry weather and wet weather flows, once it has been relined.
- Replacement of existing sewers along other project area streets with larger diameter pipelines to meet the 5-year storm design standard
- Contingent on the award of the full requested grant amount, the LID improvements proposed for Valencia Street would be constructed. This would include installing stormwater planters that will add green landscaping pockets and provide for stormwater management, constructing new plazas with permeable pavers and stormwater planting areas, and bioretention integrated into bulbouts.
- Roadway resurfacing after project completion.

Subtask 9.3: Performance Testing and Demobilization

- Equipment will be demobilized appropriately and most cost effectively with equipment remaining on site only as long as needed.
- Performance testing will occur as needed during project construction and will also be assessed after project completion.
- City streets will be restored as required to allow for traffic and pedestrian uses, as appropriate.

Deliverable(s):

- As-builts
- Performance testing reports

Task 10: Environmental Compliance/Mitigation/Enhancement

SFPUC will implement the environmental mitigation measures required in the Mitigation Monitoring and Reporting Program (MMRP). The required mitigation measures include mitigation measures for Aesthetics, Air Quality, Biological Resources, Hazardous Materials, and Cultural Resources.

Task 11: Construction Administration

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